REMARKS

The applicant has amended claims 1 and 9, and has cancelled claims 14, 15, and 16.

35 U.S.C. § 101

In the Examiner's rejection under 35 U.S.C. § 101, he cites the test for Patentability in MPEP § 2106 (II) (A). The first test is if "the claimed invention as a whole must accomplish a practical application. That is, it must produce a "useful, concrete and tangible result." The MPEP states that "The purpose of this requirement is to limit patent protection to inventions that possess a certain level of "real world" value, as opposed to subject matter that represents nothing more than an idea or concept, or is simply a starting point for future investigation or research." The applicant's work is directed to a method for "assigning sub-jobs to available cells in a printing workflow system" used for coordination of document processing. (Claim 17). This is not a theoretical idea or concept that is the starting point of research. In fact Applicant's specification clearly describes how this method is to be implemented and details its real world application to the field of printing workflow. In no way is this subject matter directed to a mere "idea or concept."

The second required test for Patentability under 35 U.S.C. § 102 is "to provide limitations in the technological arts that enables a useful, concrete or tangible result." The MPEP states that "only when the claim is devoid of any limitation to a practical application in the technological arts should it be rejected under 35 U.S.C. 101." "Further, when such a rejection is made, Office personnel must expressly state how the language of the claims has been interpreted to support the rejection." MPEP § 2106. Applicant argues that his claim element is for "assigning sub-jobs to available cells in a printing workflow system." This element shows the goal of the work is a tangible result, not a theoretical result which may be applied to any area of art. The element further states that identification of available cells, maximum and current capacity are necessary to the claims. (Claim 17) In addition the available cells are described as the maximum capacity of the cell minus its current scheduled capacity. These capacities are then used for the real purpose of assigning prints jobs to printing devices in the system.

The Applicant argues that he meets the requirements for 35 U.S.C. 101 because his application is not a theoretical or abstract idea. Instead it is the application for a method used in a specific area of art with restrictions on how the method is to be performed. (See Claim 17) Therefore, Applicant respectfully requests that the Examiner allow Claim 17 and remove his 35 U.S.C. 101 rejection. Because the dependent Claims 18-21 are based off of Independent Claim 17, Applicant argues they also should be allowed.

35 U.S.C. § 112

Examiner states that "Applicant's definition of autonomous cell only calls for a logical grouping of resources capable of entirely completing a document processing job from start to finish entirely within the autonomous cell" is vague and indefinite due to a lack of description in the specification. Applicant argues that his specification clearly defines an "autonomous cell" as a "logical grouping of resources (including both equipment and manpower) in the document factory that is sufficient for completing at least one type of document processing job." The specification goes on to state a cell may include a printer and binder or may include a copier and a collator. See Specification Page 4, line 5. In addition, the Figures in the specification give detailed examples of a preferred embodiment which includes cells. Although these groupings are referred to as "cells" in the Figures, it is easily inferred that the cells are autonomous. Furthermore, the Claims themselves describe an autonomous cell. For example Claim 1 states "each [autonomous] cell is comprised of a plurality of devices and resources at least some devices and resources performing distinct operations from one another, and that are configured to be capable of entirely completing at least one type of document processing job within said autonomous cell such that there is no dependence upon other cells for completing the job." Claim 9 describes autonomous cells as being "capable of entirely completing at least one type of document processing job within said autonomous cell such that there is no dependence upon other cells for completing the job." Therefore, Applicant argues that the specification does contain a reasonable description of an "autonomous cell" in the specification to allow one skilled

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in the art to possess the claimed invention and respectfully requests that the Examiner remove his 112 rejection on lack of description of the term "autonomous cell."

The Examiner rejected Applicant's Claim 6 based on a lack of description, 35 U.S.C. § 112, of the terms "optimal lot sizes" and "optimal utilization." Applicant argues that "lots" are described in the specification on page 7, line 8 & 13. "Optimal lot size," is the specification describes a "workflow mapping module" which can split a print job into "lots." The description of the system in the specification includes the splitting of sub jobs into lots on pages 6 and 7 of the specification. The use of the term "optimal" should convey to one in the art that the splitting of lots be done in order to optimize flow of work to the most efficient resources. Additionally, "Optimal Utilization" describes the splitting of work in order to optimize flow of work to the most efficient resources. For instance, when 1,000 documents of a sub-job, of the same document type, are to be printed, 500 documents could go to device A and the other 500 documents could go to device B. Therefore, Applicant respectfully requests that the Examiner remove his rejections in Claim 6 based on the use of terms "optimal utilization" and "optimal lot sizes."

In the Examiner's 35 U.S.C. § 112 rejection of Claim 17 for lack of written description the examiner states that how "current loading" is determined is unclear. The Applicant argues that the "current loading" is simply the documents in the print que which should be understandable to one skilled in the art and is further described on page 2 line 28 of the specification. Page 2, lines 25-31 state that the maximum capacity of the cells are their output rate of a particular product type, the cells "current loading" is the amount of work currently scheduled on the printer and the "current capacity" is the difference between maximum capacity and current loading, i.e. the amount of resources left after the current loading job is scheduled. Therefore, the Applicant requests that the Examiner remove his rejection of claim 17 based on 35 U.S.C. §112.

Applicant has amended Claim 1 to comply with the Examiner's 35 U.S.C. §112 rejection of the phrase "at least some devices." Applicant has changed the phrase to say "resources with at least one device and resources." Therefore the Applicant respectfully requests that the Examiner allow the Claim.

Applicant traverses the Examiner's 35 U.S.C. §112 rejection based on the use of

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the phrase "autonomous cell" for Claim 1 and Claim 9 by referring the Examiner to Applicant's first paragraph of the response to the 112 rejection. Applicant's response to Examiner's general rejection of the use of the phrase "autonomous cell" throughout the claims was traversed in this argument. Therefore the Applicant respectfully requests that the Examiner remove his rejection and allow Claim 1 and 9.

Applicant traverses the Examiner's 35 U.S.C. §112 rejection based on the use of the phrase "sub job" for Claim 1 and Claim 9 due to lack of descriptiveness by citing the specification and drawings. Figures 7, 12 & 13 all contain the use of the term "sub job" in the title in the "Brief Description of the drawings." Furthermore, the specification on page 6, line 27 through page 8, line 5 describes in detail a "sub job." Therefore the Applicant respectfully requests that the Examiner remove his rejection and allow Claim 1 and 9.

35 U.S.C. §102

Applicant traverses the Examiner's 35 USC 102 rejection by arguing that the art cited, Bengston (6,728,947) ('947), does not contain all of the elements of the Claims of the Applicant's invention. "To anticipate a claim, the reference must teach every element of the claim." MPEP § 2131.

The Examiner's first basis for rejection is a element from '947 which is claimed to match Applicant's claim is col 5, lines 1-60 which essentially describes a device which passes workflow from one station to another. "Each processing device (12) executes one or more of the process steps specified in the workflow file. For the purpose of simplicity in description only, a typical processing device (12) may be a personal computer." However, Applicant's invention describes in Claim 1, as quoted by the examiner, "a plurality of autonomous cells (12), wherein each cell is comprised of a plurality of devices and resources at least some devices and resources performing distinct operations from one another, and that are configured to be *capable of entirely completing at least one type of document processing job within said autonomous cell such that there is no dependence upon other cells for completing the jobs.*" (emphasis added) Applicant's claims are distinct from the '947 reference because they are "capable of entirely completing at least one type of processing job." The prior art continuously passes information from one station to

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another until the job is complete. Instead, the Applicant's invention determines how to split a job into smaller jobs if necessary and send it to the appropriate autonomous cells which will complete the job. Applicant's specification states that each cell has the capability to complete a job assigned to it without passing that job to another cell. In addition Claim 1 recites "capable of entirely completing at least one type of document processing job within said autonomous cell." Therefore, the Examiner's cited prior art reference does not correspond to a element used by the Applicant. The Applicant respectfully requests that the Examiner remove his rejection and allow the claim. The prior art by Bengston '947, does not calculate capacity or use it to determine job assignment.

The Examiner's second basis of rejection under 35 USC 102 is that (22) of the prior art corresponds to the element, in Claim 1, of "a workflow mapping module that determines workflow for a selected one of said document processing jobs." However, Bengston '947, (22) refers to a User Interface. (See column 6, line 14-16) Therefore, because the Examiner fails to cite a "workflow mapping module" from the prior art, the Applicant respectfully requests that the Examiner remove his rejection.

The Examiner's third basis for rejection under 35 USC 102 is that (16) of the prior art teaches the element from Applicant's Claim 1, for "a job decomposition module for splitting the selected document into sub-jobs that are accomplished by given ones of the autonomous cells." (16) of the prior art is an "initiating device." (See column 5, lines 64-67) The prior art's specification states that the "initiating device" as well as the editor and method to observe workflow could be a personal computer. No further description of the "initiating device" is given. The Applicant's element for a "job decomposition module" is a method for splitting jobs in order to allow efficient processes of documents while utilizing the cell resources for optimum output. Since the Examiner's cited reference does not correspond to the Applicant's claim limitation and the prior art does not teach this limitation the Applicant respectfully requests that the Examiner remove his rejection and allow the claims.

The Examiner's fourth basis of rejection, Col. 15, lines 53 – Col. 16, line 12 of the

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'947 patent states:

Illustrated in FIG. 8 is a flow diagram representing an alternate embodiment of the present invention. A processing device **12** *a* and/or an initiating device **16** sends first limited workflow data **116** *a* to a first processing device **12** *b* and second limited workflow data **116** *b* to a second processing device **12** *c* . Limited workflow data includes function(s) (operations and optional parameters) that are relevant to that particular processing device **12** (and, perhaps, functions relevant to some but not all of the processing device(s) **12**) and sequencing information related to processing step(s) subsequent to that particular processing device **12** . Preferably, although not necessarily, identification information is included with the limited workflow data (e.g., name and time stamp of a workflow). Subsequently, the processing device **12** *a* and/or an initiating device **16** sends a control signal **118** *a* to the first processing device **12** *b* . The control signal **118** *a* may include process data and preferably includes the identification information to differentiate this workflow from other workflows employing the same processing device **12** . After executing any relevant functions, the first processing device **12** *b* determines the identity of the next processing device (e.g., the second processing device **12** *c*) according to the limited sequence information it received. Accordingly, the first processing device **12** *b* sends a control signal **118** *b* to the second processing device **12** *c* . Other processes are implemented thereafter in the same manner.

In summary, persons of ordinary skill in the art will readily appreciate that a system and apparatus for implementing process steps of a workflow has been provided. Systems and devices implementing the teachings of the invention can obtain decreased costs and cycle times as well as increased quality and productivity. Further, available bandwidth is utilized in an efficient manner as no central control server is needed to communicate with each of the processing devices **12** . Messages are simply handed from one processing device **12** to the next, not from a processing device **12** back to the central control server and then to the next processing device **12** . Still further, by not relying on a central control server, no confusion as to who is in control arises, thereby making workflow execution across computing systems and corporate boundaries much easier to

implement.

Although the Examiner cites a device which assigns or passes jobs, this section of the '947 Patent and the rest of the '947 patent fail to anticipate the limitation the Examiner cited the section against. That limitation, from Claim 1, is "A cell assignment module for assigning said sub-jobs to said given one of the autonomous cells capable of accomplishing entire sub-jobs." Assignments in the '947 Patent are not based autonomous sub-jobs which independently complete the job with no other help from other cells. The '947 Patent reference refers to a job passing method of passing part of a job to one cell which completes that part and then passes the job onto the next cell for further processing.

The Examiner's fifth basis for rejection under 35 USC 102 is that (116a) and (116b) of the prior art teaches the limitation from Applicant's Claim 1, for "a product cell controller at a selected one of the given cells for receiving at least on of said autonomous sub-job and for further splitting said job into lots for processing among said plurality of devices in said selected autonomous cell." The prior art's (116a) and (116b) refer to processing devices. (see column 15 lines 56-58) However, the prior art does not teach these devices "for further splitting said job into lots for processing among said plurality of devices" in the autonomous cells. Applicant argues that the prior art does not teach the parsing of jobs, and therefore the Applicant's limitation is not anticipated by the '947 and the Examiner is requested to remove his rejection.

Applicant respectfully argues that the Bengston 6,728,947 does not contain all of the limitations of the Applicant's work because of its major differences from the Applicant's work. 947' deals with workflow execution where the workflow data is passed from one processing device to the next device. Each processing device performs the process step specified by the workflow file with the selected parameters and optionally sends status information to observing devices. This sequence continues until all process steps are executed or an error occurs. Applicant claims a method for splitting jobs and teaches the assignment of jobs using scheduling techniques to optimize production. All of the Applicant's independent claims recite splitting. Claim 1: "a job decomposition module for splitting" jobs into "sub-jobs." Claim 9: "splitting

selected document processing jobs into sub-jobs." Claim 17: the use of "assigning sub-jobs" which are jobs split from a larger job. The prior art does not teach these elements.

Amendments to the Claims

Applicant's amendments to Claim 1 have added additional elements describing how splitting is accomplished and the use of kanban based pull systems where downstream devices request work and material from upstream devices. Claim 9 also discusses kanban's and pull systems. No where in the '947 Patent is there any discussion of pull systems or Kanbans, instead the systems is the traditional top down driven system. In addition, claim 9 incorporates the additional elements included in claims 14, 15 and 16. These elements are also not taught in the '947 prior art. These elements now included in claim 9 include: splitting sub-jobs into further sub units in order to allow multiple cells to process the same sub-job at the same time thereby completing the work in less time and utilizing printing resources. The use of kanbans and the associated pull system where downstream cells and devices request work from units of the system that have work and would traditionally assign them in a top-down system. These elements are not included in the '947 Patent.

The Applicant respectfully argues that the prior art '947 Patent does not anticipate all of the Claims of the Applicant's work as required for a 35 USC 102 rejection. (see MPEP § 2131) Therefore, the Applicant respectfully requests that the Examiner remove his rejections and allow the Claims.
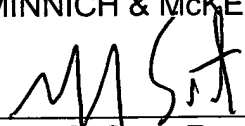
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CONCLUSION

For the reasons detailed above, it is respectfully submitted all claims remaining in the application (Claims 1, 3 6-9, 17-21, 25-26, and 29-30) are now in condition for allowance.

Applicant has amended Claim 1 to comply with the Examiner's 35 U.S.C. §112 rejection of the phrase "at least some devices." Applicant has changed the phrase to say "resources with at least one device and resources."

Respectfully submitted,

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CERTIFICATE OF MAILING

Under 37 C.F.R. § 1.8, I certify that this Amendment is being

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